Before The

FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Federal-State Joint Board on	)	CC Docket 96-45
Universal Service	)	

Introduction

1. My name is Trevor R. Roycroft and my address is 51 Sea Meadow Lane, Brewster, MA, 02631. I am an independent consultant specializing in economics and policy related to telecommunications and information technology, industries which I have been involved with since 1991. I received my Ph.D. in Economics from the University of California, Davis. In addition to my educational background and experience as a consultant, I was an associate professor in Ohio University's J. Warren McClure School of Communication Systems Management from September of 1994 to November of 2004. I was granted tenure at Ohio University in May of 2000. In my capacity at Ohio University I taught courses related to economics and policy in the telecommunications industry. I have participated in regulatory proceedings at the state and federal level and have extensive experience with cost modeling. Prior to my employment at Ohio University, I was employed by the Indiana Office of Utility Consumer Counselor (OUCC) from May of 1991 until July of 1994. For most of my tenure at the OUCC I was Chief Economist.

Purpose of the Affidavit

2. I have been asked by NASUCA to respond to a limited set of comments filed in this docket and to evaluate the feasibility of applying the FCC's Synthesis Model (FCC SM) to carriers other than the non-rural carriers to which the model is currently applied for Universal Service funding purposes. I have performed multiple runs of the FCC SM to develop forward-looking loop cost estimates for the group of 39 rural companies which have state-level line counts greater than 100,000 (the Study Group).[1] On a combined basis, these companies serve about 12 million lines and received approximately $244 million in high-cost loop support in 2003. The results of my analysis indicate that application of the FCC SM to this Study Group for purposes of funding high-cost loop support is feasible and appropriate. Application of the FCC SM, combined with the benchmarking process and funding formulae discussed below, results in a reduction in funding from 2003 high-cost loop support by about $146 million per year for the companies in the Study Group.

A Forward-looking Cost Standard is Appropriate for Determining Universal Service Support

3. Most commenters in this proceeding indicate that embedded costs are superior to economic costs for purposes of funding Universal Service.[2] This position is incorrect.

[1] As is indicated in NASUCA's Comments, state-level subsidiaries from the same holding company are combined to determine state line counts. Hereinafter, the term "Study Group" should be understood to mean the group of companies with combined state-level operations of at least 100,000 lines.

[2] The most elaborate argument in favor of embedded costs is presented by the (continued...)

Application of a forward-looking economic-cost-based funding approach for these companies is desirable from an economic and policy perspective. A forward-looking cost basis is superior to embedded costs for two main reasons. First, application of forward-looking economic cost methodology introduces an incentive regulatory framework linked to the satisfaction of Universal Service objectives, which is a desirable outcome. By establishing a benchmark based on the forward-looking cost characteristics of the firms in the Study Group, as I propose in this affidavit, the management of these companies is provided an incentive structure which will reward efficient operations. The use of incentive regulation for achieving Universal Service objectives is desirable as rate-of-return/embedded cost regulation has been shown to be inferior to regulatory plans which break the connection with embedded costs. Secondly, use of forward-looking costs is necessary in an environment of emerging competition to send the correct signals to new market entrants and provide appropriate incentives for investment and innovation.[3] I will discuss these two advantages in turn.

Forward-looking Costs Provide the Appropriate Incentive Structure

4. Economists and policy makers learned a valuable lesson during the 1990s — properly constructed price cap and incentive regulation plans have the potential to provide benefits for ratepayers and the owners of regulated firms. Price cap plans with productivity

[2](...continued)
National Telecommunications Cooperative Association, in a paper by Dale Lehman: "The Role of Embedded Cost in Universal Service Funding."

[3] See, for example: *In the Matter of Federal-State Joint Board on Universal Service*, Report and Order, CC Docket 96-45, FCC 97-157, May 8, 1997, ¶224.

offsets that anticipated forward-looking productivity gains resulted in annual rate decreases. The management of a company so regulated could only improve profitability by improving efficiency. Breaking of the connection between rates charged and embedded costs is the foundation of successful incentive regulation plans. If this connection is not broken, there is less incentive for the management of regulated companies to improve efficiency.[4]

5. One of the main advantages of using forward-looking costs as a means to establish Universal Service funding is its independence from embedded costs. This approach provides the foundation to establish an incentive structure associated with Universal Service funding. Rather than awarding the funding based on a company's historic cost, a forward-looking benchmark is established based on the average characteristics of a benchmark group of companies. Similar to a price cap, the forward-looking support benchmark provides a target against which management can compete and will thus lead to a more efficient means of achieving Universal Service objectives.

A Forward-looking Cost Basis Sends the Correct Economic Signals

6. If pure monopoly is allowed, then the importance of forward-looking costs is mitigated.

[4] See for example: Roycroft, Trevor. "The Impact of State and Federal Alternative Regulation Plans on the RBOCs--a State Level Analysis." in *Telecommunications for the 21st Century*. Special issue of *The International Journal of Development Planning Literature*. William Baumol and Victor Beker eds. Vol. 16, Nos. 1 & 2, January and April 2001. See also, King, Stephen, "Principles of price cap regulation," in *Infrastructure Regulation and Market Reform: Principles and Practice.* University of Florida's Public Utility Research Center (PURC) and the Australian Competition and Consumer Commission (ACCC), 1998.

However, once local exchange competition is possible, due to policy mandates such as the Telecommunications Act of 1996, use of forward-looking costs to establish Universal Service funding becomes critical. New market entrants will make their entry decisions based on forward-looking economic costs. If Universal Service funding is based on the embedded costs of the incumbent, the funding level will not reflect an outcome expected if market forces were present. If Universal Service funding based on the incumbent's embedded costs is available to new market entrants, and the entrant's forward-looking costs are below those of the incumbent's embedded costs, excessive support will be provided to new entrants. Use of the incumbent's forward-looking costs will mitigate this problem.

The Inappropriateness of "Actual" Costs

7. Some commenters indicate that a forward-looking cost methodology should reflect "actual costs."[5] The use of the "actual cost" concept must be carefully considered and should not be a back-door mechanism for the application of an embedded-cost approach. Forward-looking cost modeling should reflect the general circumstances facing the companies to be modeled, not the specific experience of each individual company. A general measure of input, labor, and capital costs reflecting the forward-looking operating characteristics of smaller ILECs is appropriate. However, the Joint Board should not adopt a costing methodology that focuses on the actual costs which individual carriers incur, as this will fail to break the link between embedded cost and management

[5] Comments of Iowa Network Services, p. 10; Comments of Fred Williamson and Associates, p. 12; Comments of Sprint, p. 3.

decision-making—and the breaking of this link is the basic foundation of incentive regulation.

8. An illustration of the lack of economic relevance of "actual" or embedded costs is illustrated by a *Wall Street Journal* article from 2003. The article discusses the retirement of the last Boeing 727 jet from U.S. carriers' scheduled airline service, which occurred in April of 2003 when Delta Airlines decommissioned its final 727.[6] At one time the Boeing 727 was the state-of-the-art passenger aircraft. However, over time it was surpassed by other aircraft models.

9. When applying forward-looking economic cost methodology to the production of airline flights, the approach would establish the least-cost forward-looking means of providing flights, given existing airport locations.[7] The inappropriateness of the use of actual costs can be seen by considering the impact on the expenses and investment needed to produce a cost estimate in the following:

> Between 1964 and 1984, Boeing produced 1,832 727s. But what once was economical proved to be too expensive over time. Boeing began designing jets with two engines, instead of three, and two pilots, instead of three. The Boeing 757 had more seats than the 727 and transcontinental range. It was far more economical. The Boeing 737 was smaller and cheaper to fly, and could profitably serve even smaller cities, or provide frequent service attractive to business travelers. The 737 became Boeing's best-selling plane,

[6] Scott McCartney. "Final flight of Boeing's 727 by U.S. Carriers is a Milestone," *Wall Street Journal*, February 12, 2003 ("Final Flight").

[7] As will be discussed shortly, it is possible that an efficient carrier might choose a mix of aircraft that was not exclusively state-of-the-art. However, competitive market forces would not allow the prices for obsolete aircraft to reflect their embedded investment. Similarly, forward-looking expenses would not be accurately represented by those associated with an incumbent carrier's embedded fleet of aircraft.

eclipsing the 727. And Airbus came up with the A320, a plane with a wider fuselage to offer a bit more passenger comfort, not to mention faster speed and longer range. A 727 consumes about 1,260 gallons of jet fuel an hour, while an A320, carrying the same number of seats, burns on 788 gallons an hour.

Today, the market has evolved beyond just replacing three-engine, three-pilot jets with two-engine, two-pilot planes. The economics of the industry, and the capabilities of airplanes, now dictate that small 50-seat regional jets fly to many of the very same small cities that saw the 727 as their first commercial passenger jet. Using a 150-seat jet to fly to Amarillo, Texas, seems like a silly proposition these days. Three 50-seat regional airline flights offer better revenue potential to carriers than one 150-seat mainline flight. Believe it or not, the three small-jet flights also offer lower costs in terms of crews and fuel.[8]

10. Applying "actual cost" logic to expenses associated with the technological and market evolution associated with the Boeing 727 scenario provides a clear example of the economically meaningless nature of expenses associated with embedded technologies. If an incumbent carrier with a fleet of 727 aircraft predicted its "actual" labor costs, the costs would be associated with the use of three pilots on each flight. That same carrier predicting "actual" fuel usage for each 727 flight would identify 1,260 gallons per hour. It is clear that this is a very poor predictor of the expenses associated with the forward-looking technology associated with serving a route. For a new entrant at the time the Airbus A320 came onto the market, forward-looking labor expenses for an entrant could be reduced by as much as 33% as compared to the 727, because the Airbus A320 only requires two pilots.[9] Given the lower fuel consumption associated with the Airbus A320, fuel expenses could be reduced by as much as 38% compared to the incumbent's embedded 727 baseline. No new entrant would base its entry decisions on the assumption

[8] "Final Flight."

[9] This discussion abstracts from issues related to labor cost differentials which might arise from use of non-union pilots.

that its operating expenses would be constrained by the same levels of expenses associated with the incumbent's fleet of 727s.

11. Turning to the issue of investment, applying forward-looking principles to the airline example would recognize the fact that a new airline would have the option of purchasing or leasing either new state of the art aircraft or less efficient used aircraft. Market forces associated with the sale or lease of aircraft would not allow the embedded investment values associated with inefficient aircraft to have any influence on the market price of such aircraft that might be considered for lease or purchase by a new entrant — the market value of the older aircraft would not depend on its embedded costs, but on the forward-looking costs of its operation relative to the cost of purchasing and operating new equipment.

12. If market forces did exist for the provision of ILEC facilities, the same constraints would apply to an ILEC as apply to an airline that was planning to lease inefficient aircraft, i.e., the market value of the older technology would *not* depend on what the owner originally paid for it.

13. Unlike the market for the lease or purchase of used aircraft, which is subject to some competitive forces, the market for ILEC facilities does not as yet show significant evidence of facilities-based entry. Given the lack of market forces, regulators must replicate the outcome that would be expected if the market were competitive, i.e., if an airline were to offer to sell or lease its older aircraft, the price at which it could do so would be constrained by the cost of acquiring and operating new aircraft. The use of forward-looking economic costs is the only way to replicate this market outcome and

calls for use of "actual costs" should be rejected for what they are – i.e., an attempt to redirect forward-looking costs to embedded costs.

Calculating Forward-Looking Loop Costs

Description of the FCC SM

14. In its efforts to determine the appropriate level of support for universal service, the FCC convened a proceeding to examine the state of the art in economic cost modeling for the local exchange. The FCC ultimately settled on a "Synthesis Model," (the FCC SM) which incorporated methodologies associated with what was then known as the Hatfield Model (now known as the HAI model),[10] the benchmark cost proxy model (BCPM),[11] and the FCC Staff's own efforts at estimating loop costs. The FCC SM utilizes the switching and interoffice portions of the HAI model in the FCC SM, and the FCC Staff's approach to calculating loop costs.

15. The FCC SM is a computer-based forward-looking economic cost model. The FCC SM can generate estimates of the forward-looking costs of network facilities and services without having to rely on cost studies prepared by incumbent local exchange carriers. The FCC SM is a publicly-available cost model, which allows assumptions and cost calculation algorithms to be examined and evaluated.[12] The FCC currently uses the FCC

[10] The HAI model has generally been sponsored by IXCs and CLECs.

[11] The BCPM was developed and sponsored by RBOCs.

[12] Western Wireless, through Mr. Stegeman's paper on cost modeling, indicates that the BellSouth Telecommunications Loop Cost Model (BSTLM) has improved (continued...)

SM to establish Universal Service funding levels for non-rural carriers. In addition, the FCC SM has been utilized by the FCC to establish the reasonableness of rates for unbundled network elements (UNEs), and to benchmark UNE prices in various §271 proceedings.[13]

16. The FCC SM, when generating forward-looking cost estimates, takes into account a large number of factors which will influence the costs associated with local exchange facilities, such as input and labor prices, capital costs, customer locations, and soil conditions. The FCC SM has a large number of user-adjustable inputs. As I will discuss further below, I have adjusted input prices and line counts for the companies studied to reflect conditions

[12](...continued)
upon the methodology of the FCC SM. The BSTLM-CostPro model, developed by Mr. Stegeman's firm CostQuest, is available for purchase from CostQuest. Western Wireless provided no detailed information on, nor any output from, the BSTLM-CostPro model as part of its filing.

The FCC SM can be downloaded from the FCC's web site at no charge (http://www.fcc.gov/wcb/tapd/hcpm/welcome.html).

[13] See, for example: *In the Matter of Petition of Worldcom, Inc. Pursuant to Section 252(e)(5) of the Communications Act for Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia Inc., and for expedited Arbitration; In the Matter of Petition of AT&T Pursuant to Section 252(e)(5) of the Communications Act for Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia Inc.* CC Dockets 00-218 and 0-251, Memorandum Opinion and Order, DA 03-2738, August 29, 2003, ¶48-50. See also, *In the Matter of Joint Application by SBC Communications Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Service, Inc. D/b/a Southwestern Bell Long Distance for Provision of In-Region, InterLATA Service in Kansas and Oklahoma,* CC Docket No. 00-217, Memorandum Opinion and Order, January 22, 2001, ¶84. See also, *In the Matter of Application by SBC Communications Inc., Pacific Bell Telephone Company, and Southwestern Bell Communications Services Inc., for Authorization To Provide In-Region, InterLATA Services in California,* WC Docket No. 02-306, Memorandum Opinion and Order, December 19, 2002, ¶64.

existing in 2003.

17. The FCC SM has separate modules which focus on calculation of (1) loop costs and (2) switching and transport costs. Given the nature of the companies in the Study Group, i.e., rural companies with more than 100,000 lines on a combined state-level basis, I believe that the FCC SM is most useful in calculating loop costs for this type of company.

18. The deployment of switching and transport by companies in the Study Group may have differences when compared with the assumptions of the FCC SM. For example, rural holding companies operating within a state may concentrate switching and rely on remote terminals or backhauling of traffic to provide switching in their overall service area. The FCC SM may place switching closer to the subscriber.

19. The loop module of the FCC SM, however, is well suited to the calculation of forward-looking costs associated with companies in the Study Group. The FCC SM begins with customer location information and designs feeder and distribution plant necessary to serve the customer locations. As loop technology has less variation in its design and deployment than switching and transport, the loop cost calculation methodology associated with the FCC SM will provide a reasonable means to develop a Universal Service funding mechanism for loops for companies in the Study Group.

Use of the FCC SM is Appropriate

20. I have spent a good deal of time investigating and running the FCC SM. In addition to becoming familiar with the operations of the model, I have also performed extensive

sensitivity analysis of the model to explore the model's behavior and predictions with regard to the underlying economics of the local exchange. I believe that the FCC SM is the best available alternative for estimating the forward-looking costs of local exchange technology. Clearly, this has been the opinion of the FCC, as they have used the FCC SM to develop forward-looking costs associated with universal service funding for non-rural carriers.

21. The FCC evaluated inputs for use with the FCC SM. Through a process of public comment, the FCC developed a set of default input values which I believe provide a reasonable starting point for establishing forward-looking costs. As I will discuss further below, another advantage of the FCC SM is the ability to adjust input values, which I do for certain network inputs.

22. Many commenters indicate that the FCC SM is not appropriate for rural carriers, either pointing to, or separately reiterating, criticism from the Rural Task Force's evaluation of the model.[14] The FCC, however, has already rejected this position:

> The Commission previously determined that support based on forward-looking cost is sufficient for the provision of the supported services and sends the correct signals for entry, investment, and innovation. Many commenters representing the interests of rural LECs argue that the Rural Task Force's analysis conclusively demonstrates that the forward-looking cost mechanism should not be used to determine rural company support and that only an embedded cost mechanism will provide sufficient support for rural

[14] See, for example, Comments of ACS Alaska, p. 11; Comments of ALLTEL Corp. p. 8; Stegeman's "Proposal for a Competitive and Efficient Universal Service High Cost Funding Model/Platform," p. 7-9, (filed by Western Wireless); and OPATSCO Comments, p. 10.

carriers. We disagree.[15]

23. Furthermore, the FCC has identified flaws in the Rural Task Force's criticism of the FCC SM. One notable shortcoming was the Rural Task Force's failure to update input prices used in the FCC SM to correspond with prices more typically associated rural companies:

> . . .[T]he Rural Task Force's analysis of the forward-looking mechanism was based on the results of running the existing high-cost universal service model for rural companies using non-rural inputs. Because it found significant differences in comparing these results with actual company data, the Rural Task Force found that the model was not an appropriate tool for determining forward-looking costs of rural carriers. *If inputs based on rural carrier data had been used, however, many of the differences could have been eliminated.*[16]

24. In addition, FCC noted that with regard to line counts, the Rural Task Force's analysis was deficient:

> For example, the Rural Task Force said "model lines differed significantly from actual lines served" . . . . This is not surprising because the Rural Task Force did not use current line count data as input values. Instead, the Rural Task Force used the line count data developed by AT&T's consultant for use in the industry-sponsored HAI model, which had been trued up to 1996 ARMIS line counts. *Updating line counts on a regular basis is an important aspect of estimating costs in the non-rural mechanism.*[17]

Thus, by updating line counts, as I have done in my analysis, the cost experience of the

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[15] *In the Matter of Federal-State Joint Board on Universal Service; Multi-Association Group (MAG) Plan for Regulation of Interstate Services of Non-Price Cap Incumbent Local Exchange Carriers and Interexchange Carriers,* CC Dockets Nos. 96-45 and 00-256, Fourteenth Report and Order, Twenty-Second Order on Reconsideration, and Further Notice of Proposed Rulemaking in CC Docket No. 96-45, and Report and Order in CC Docket No. 00-256. FCC 01-157, May 23, 2001, ¶174, footnotes omitted.

[16] *Id,* ¶175, footnotes omitted, emphasis added.

[17] *Ibid.*, footnote 411 .

rural companies in question can be more accurately tracked.

25. In sum, the FCC SM provides the best available method for estimating forward-looking loop costs. Making appropriate adjustments to line counts and input prices will generate cost estimates reflecting forward-looking conditions for the Study Group.

Vintage of the Customer Location Files

26. Some commenters point to the vintage of the customer location data associated with the FCC SM as a serious problem with the model.[18] While more recent data on the location of customers would be desirable, use of the original customer location data does not present a serious limitation on the effectiveness of the FCC SM for estimating loop costs.

27. As customer growth occurs, there are a limited number of scenarios which are relevant to the performance of the FCC SM. First, customer growth may occur when customers subscribe to additional lines. These customers will thus utilize feeder and distribution cable more intensively from their existing locations, generating economies of scale for the telephone company. This type of growth is captured using existing customer location files. An alternative form of customer growth occurs when vacant land which is already passed by feeder or distribution plant is developed. In cases where existing distribution routes pass new demand, the result is a more intensive use of both distribution and feeder plant, higher customer density in the wire center area, and economies of scale. My analysis of the FCC SM indicates that truing-up line counts shows an impact on costs consistent with this outcome.

[18] Western Wireless, Stegeman paper, p. 7; USTA, p. 12; GVNW Consulting, p. 12.

28. Alternatively, if the customer growth is in an area that is passed only by a feeder route, but not distribution, then extension of distribution to the new customers would likely reflect distribution characteristics present in the FCC SM databases, thus making existing customer location data a reasonable proxy for the network characteristics associated with the deployment of new distribution networks. The result of adding customers to the network under this scenario would be economies of scale as existing feeder plant would be used more intensively, which is an outcome reflected with line-count true-ups with the FCC SM.

29. Finally, if customer growth occurs in an entirely unserved area, to which both feeder and distribution plant would need to be extended, which is a less likely scenario, the characteristics of the service territory as captured in information contained in the FCC SM databases with regard to the location and characteristics of existing customers would make the existing network information a reasonable basis to account for new customer growth which occurred in this fashion — costs of serving new areas in a mountainous (or flat) service territory are likely to reflect the forward-looking costs of serving existing customers in the service area. As the company expands into new areas, economies of scale will still be likely to emerge. Thus, regardless of the characteristics of customer growth, the FCC SM is capable of capturing the impact of customer growth on costs.[19]

[19] The FCC SM also provides a reasonable basis for estimating costs where customer counts decline. Analysis that I have performed shows that the FCC SM produces reasonable estimates of diseconomies of scale (higher cost per customer) as customer counts fall.

Application of the FCC SM to the Study Group

Issues of Costs, Benchmarks, Averaging, and Funding Formulae

30. I believe that forward-looking costs, as calculated by the FCC SM, should be used as the loop-cost standard to be applied to the Study Group. However, the choice of the cost standard is only one part of the process of determining the level of Universal Service funding. Implementing Universal Service funding is a three-step process: (1) a cost standard must be employed, (2) a benchmark must be determined (which will necessarily specify the level of averaging associated with the process), (3) and funding formulae must be settled upon. The FCC implemented Universal Service funding for non-rurals using these three steps in the following manner: (1) The FCC used forward-looking costs as calculated by the FCC SM as the cost standard. (2) The FCC separately developed a benchmark — the level of costs two standard deviations above the nationwide average. Statewide average costs are compared to the national benchmark to determine eligibility for funding. (3) For those states with above-average costs, the FCC then applies a funding formula, which provides support for 76% of the portion of the forward-looking cost of providing supported services that exceed the national benchmark.[20]

31. Some commenters, in addition to reiterating groundless criticisms of the FCC SM expressed by the Rural Task Force, confuse forward-looking cost modeling with the separate issues of cost benchmarking, cost averaging, and the application of funding

[20] *In the Matter of Federal-State Joint Board on Universal Service*, CC Docket 96-45, Ninth Report & Order and Eighteenth Order on Reconsideration, FCC 99-306, November 2, 1999, ¶63.

formulae.[21] This incorrect lumping together of distinct concepts should be rejected. The FCC SM is entirely independent of the construction of appropriate benchmarks and funding formulae for rural LECs.

32. Of course, it is a fact, as I will discuss further below, that the benchmark, averaging, and funding formulae have a significant impact on Universal Service support. However, the Joint Board should not fall into the trap of lumping together criticism of the FCC SM with application of the non-rural benchmarks, averaging conventions, and funding formulae to rural companies, as some commenters do. The FCC appropriately recognized the importance of differentiating between a cost standard and averaging conventions and benchmarks:

> . . .[T]he Rural Task Force acknowledged that the primary reason for the decrease in its estimated total support amounts for rural carriers is due to the statewide cost-averaging and nationwide benchmark employed in the non-rural mechanism to determine funding levels for non-rural carriers. Indeed, the Rural Task Force's analysis in White Paper 4 demonstrates how changing the nationwide benchmark dramatically changes support amounts. That is, averaging and benchmarks have more impact on determining support levels than the cost estimates produced by the model. The Commission has long recognized that the mechanism used to determine forward-looking cost for rural carriers may differ from that used for non-rural carriers. *For instance, one could design a forward-looking mechanism for rural carriers that uses different benchmarks and averaging conventions.*[22]

33. I will now turn to a discussion of my application of the FCC SM as a cost standard, combined with a benchmark, averaging conventions, and funding formulae which are well suited to the rural carriers in the Study Group.

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[21] Fred Williamson and Associates, p. 14; Stegeman paper filed by Western Wireless, pp. 7-8.

[22] *Ninth Report and Order,* supra note 20, ¶176, emphasis added.

Description of the Study Group

34. Using 2003 line counts, companies with state-level operations with at least 100,000 access lines were identified.[23] In most cases, the companies are part of a large holding company, such as ALLTEL, Citizens, Sprint, or Century. Several companies, however, are single-state stand-alone entities without holding company affiliation. There is a total of 39 state-level entities in the Study Group, and these companies have 128 subsidiaries (or operating companies).[24] Table 1, below, lists the companies in the Study Group, along with their holding company affiliations, states, and 2003 line counts.

Line Counts

35. Line counts were adjusted from the default levels contained in FCC SM databases to correspond to current line counts reported by NECA.[25] While the FCC SM runs were performed using the original customer location data, it is appropriate to reflect line growth changes in the cost calculations (both positive and negative). Rural companies

[23] Line counts were obtained from files supporting NECA's 2004 Universal Service Fund Filing. See: "Universal Service Fund 2004 Submission of 2003 Study Results by the National Exchange Carrier Association, Inc. October 1, 2004." Available at: http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/Monitor/index.html

Specific files used for line counts are contained in the file "usf04r03.zip", which is available at the same URL.

[24] The value of 128 combines the subsidiaries of holding companies with the single-state stand-alone companies which have no holding company affiliation.

[25] With the exceptions of the companies for which data was missing (discussed below), all FCC SM line counts are within ± 2% of 2003 levels reported by NECA.

Table 1: Summary of the Study Group

Number of Subsidiaries in State	Holding Company	SAC Name	State	SAC	Holding Company Line Count in State
1	Alltel	Alltel AR	AR	401691	107,965
6	Century	Contel of Russellville	AR	401142	264,837
	Century	Century Tel Silom AR	AR	401143	
	Century	CENTURYTEL OF CENTRAL ARKANSAS	AR	401144	
	Century	Century Telephone Of Mountain Home AR	AR	401711	
	Century	Century Telephone Of Redfield AR	AR	401720	
	Century	Century Tel South AR	AR	401727	
3	Citizens	Citizens Rural AZ	AZ	452172	165,471
	Citizens	Citizens Utilities Co Wh MT AZ	AZ	454426	
	Citizens	Navajo Frontier Communications Co Inc-AZ	AZ	454449	
3	Citizens	CA Citizens Utilities	CA	542308	154,548
	Citizens	Citizens Telecom Of Gold. St. CA	CA	543402	
	Citizens	Citizens Telecommunications Co Of Tuolu CA	CA	544342	
1	Sprint	United FL	FL	210341	2,063,198
6	Alltel	Alltel Georgia GA	GA	220357	597,972
	Alltel	Alltel GA (Georgia Tel)	GA	220364	
	Alltel	Georgia Standard GA	GA	220386	
	Alltel	Alltel GA (Accucom/Wikinson)	GA	220395	
	Alltel	Georgia Alltel GA	GA	223036	
	Alltel	Alltel Georgia Communications GA	GA	223037	
1	ITS	Iowa Telecom Systems	IA	351178	275,150
1	Verizon	GTE NW ID	ID	472416	131,917
9	Citizens	Frontier Comm Of Depue Inc IL	IL	340998	125,626
	Citizens	Frontier Comm Of Lakeside IL	IL	341011	
	Citizens	Citizens-frontier of IL	IL	341038	
	Citizens	Citizen Frontier of Midland IL	IL	341055	
	Citizens	Citizens-frontier of Mt. Pulaski IL	IL	341061	
	Citizens	Citizens Frontier of Orion IL	IL	341067	
	Citizens	Citizens Frontier Prarie IL	IL	341073	
	Citizens	Citizens Frontier schuyler IL	IL	341079	
	Citizens	Citizens Telecommunication of IL	IL	341183	
1	Sprint	United IN	IN	320832	271,453
3	Sprint	United Tel of Eastern KS	KS	411317	133,430
	Sprint	United KS	KS	411842	
	Sprint	The Utc Of Mo Dba Utc Of Se KS	KS	411957	
9	Century	Century Tel of Central LA	LA	270423	102,283
	Century	Century Tel Of Southeast LA	LA	270424	
	Century	Century Tel of Chatham LA	LA	270427	
	Century	Century Tel Of Northwest LA	LA	270431	
	Century	Century Tel Of Evangeline LA	LA	270434	
	Century	Century Tel Of North Louisiana LA	LA	270436	
	Century	Century Telephone Of Ringgold LA	LA	270439	
	Century	Century Tel of East LA	LA	270440	
	Century	Century Tel Of Southwest LA	LA	270442	
4	Century	Century Tel Midwest Inc MI	MI	310671	105,571
	Century	Century Tel Of Michigan Inc	MI	310702	
	Century	Century Tel Upper Michigan	MI	310689	
	Century	Century Telephone Of Northern MI	MI	310705	
3	Citizens	Contel citizens lakes MN	MN	361123	263,851
	Citizens	Frontier Comm Of Minnesota MN	MN	361367	
	Citizens	CITIZENS-FRONTIER-MN	MN	367123	
1	Sprint	United Telephone Co Of Minn	MN	361456	168,457
1	Sprint	United Telephone Co Of Missouri	MO	421957	239,627
1	Alltel	Alltel Carolina Inc-NC	NC	230476	232,584
1	NA	The Concord Tel Co NC	NC	230474	116,761
2	Sprint	Carolina Tel And Tel NC	NC	230470	1,401,055
	Sprint	Central Tel Co (united)-NC	NC	230471	
1	Alltel	Alltel NE	NE	371568	266,097
1	Sprint	United Tel Co Of NJ	NJ	160138	221,709
1	Sprint	United Tel Co Of Ohio	OH	300661	588,163
1	Valor	Valor OK	OK	431165	114,764
3	D&E	Buffalo Valley Tel Co	PA	170151	144,577
	D&E	The Conestoga Tel And Tel PA	PA	170162	
	D&E	Denver And Ephrata Tel And Tel PA	PA	170165	
1	NA	C-tec Corp PA	PA	170161	338,666
1	Sprint	United Tel Co Of PA	PA	170209	384,743

Table 1: Summary of the Study Group

Number of Subsidiaries in State	Holding Company	SAC Name	State	SAC	Holding Company Line Count in State
1	Alltel	Alltel Pennsylvania, Inc	PA	170176	234,649
5	Rock Hill	Fort Mill Tel SC	SC	240521	144,539
	Rock Hill	Home Tel Co Inc-SC	SC	240527	
	Rock Hill	Lancaster Tel SC	SC	240531	
	Rock Hill	Pond Branch Telephone	SC	240539	
	Rock Hill	Rock Hill Tel Co SC	SC	240542	
1	Sprint	United Inter-mountain Tel Co-TN	TN	290567	246,852
4	TDS	Concord Tel Exchange TN	TN	290559	103,426
	TDS	Humphrey's County Tel TN	TN	290566	
	TDS	Tennessee Tel Co	TN	290575	
	TDS	Tellico Tel Co TN	TN	290578	
2	Alltel	Sugar Land Tel Co TX	TX	442147	112,972
	Alltel	Texas-Alltel TX	TX	442153	
2	Sprint	United Telephone Co Of Texas	TX	442084	384,171
	Sprint	Central Telephone Company Of TX	TX	442114	
2	Consolidated Communications, Inc.	TXU (Ft Bend) TX	TX	442072	164,632
	Consolidated Communications, Inc.	TXU	TX	442109	
2	Valor	Valor	TX	441163	340,350
	Valor	Kerrville Telephone Company (Valor TX)	TX	442097	
2	Sprint	Centel VA	VA	190254	398,761
	Sprint	United Inter-Mountain	VA	190567	
2	Century	CENTURYTEL OF WASHINGTON, INC.	WA	522408	184,216
	Century	Cowiche Telephone Co Century WA	WA	522410	
17	Century	Cencom Of Wisconsin Inc Dba Pti WI	WI	330841	464,965
	Century	Casco Tel Co WI	WI	330857	
	Century	Fairwater-Brandon-alto Tel Co WI	WI	330877	
	Century	Forestville Tel Co Inc WI	WI	330884	
	Century	Century Tel Of Wisconsin Inc	WI	330895	
	Century	Century Tel Of Larsen-readfield WI	WI	330898	
	Century	Century Tel Of Monroe County WI	WI	330913	
	Century	North-west Tel Co (century) WI	WI	330922	
	Century	Peoples Tel Co Of Rand Century So. WI	WI	330931	
	Century	Platteville Tel Co Dba Century WI	WI	330934	
	Century	Century of Thorpe	WI	330959	
	Century	Century Kendal	WI	330924	
	Century	Century Tel Of Northwest Wisconsin Inc	WI	330950	
	Century	Century Tel Of Northern Wisconsin Inc	WI	330956	
	Century	Wayside Tel Co Century MW WI	WI	330970	
	Century	GTE North Inc-WI (Telephone USA/Central WI)	WI	331155	
19	TDS	Badger Telecom Inc WI	WI	330844	154,342
	TDS	Black Earth Tel Co WI	WI	330849	
	TDS	Bonduel Tel Co WI	WI	330851	
	TDS	Burlington Brighton And Wheatland WI	WI	330856	
	TDS	Central State Tel Co WI	WI	330859	
	TDS	Dickeyville Tel Co WI	WI	330875	
	TDS	Farmers Tel Co-WI	WI	330880	
	TDS	Mid-plains Tel Inc WI	WI	330881	
	TDS	Midway Tel Co WI	WI	330909	
	TDS	Eastcoast Telecom Inc WI	WI	330914	
	TDS	Mount Vernon Tel Co WI	WI	330917	
	TDS	Grantland Telecom Inc WI TDS	WI	330930	
	TDS	Riverside Telecom Inc TDS WI	WI	330943	
	TDS	Scandinavia Tel Co WI	WI	330945	
	TDS	Southeast Tel Co Of WI	WI	330952	
	TDS	Stockbridge And Sherwood Tel WI	WI	330954	
	TDS	Tenney Tel Co WI	WI	330958	
	TDS	Utelco Inc TDS WI	WI	330963	
	TDS	Waunakee Tel Co TDS WI	WI	330968	
3	Citizens	Citizens Mountain State Tel Co	WV	200271	157,084
	Citizens	Citizens Utilities Co Dba Citizens Of WV	WV	204338	
	Citizens	Citzens Frontier WV	WV	204339	

Total
128

experience economies of scale as their customer base grows (and diseconomies of scale if their customer base shrinks). For most rural companies, continuing line growth has characterized their operations, unlike non-rurals, which have had some competitive inroads resulting in decreasing line counts.[26] The FCC SM allows for line counts to be "trued-up" in the model runs, and I made this selection to bring line counts to levels reported by NECA for 2003.

Input Prices

36. Prices of copper and fiber optic cable have a significant impact on the cost of building loop plant. The FCC SM bases its input prices for copper and fiber optic cable on data from the Rural Utilities Service (RUS).[27] The baseline data utilized by the FCC in the selection of input prices thus focused on the experience of rural companies. The rural data was not considered appropriate for use with the non-rural companies, and in its *Inputs Order*, the FCC adjusted input prices *downward* to account for purchasing power expected for the RBOCs.[28] Given the FCC's adjustment process, which accounted for the superior purchasing power of the non-rural companies, it is appropriate to adjust copper

[26] For the Study Group, average line count growth between 1996 and 2003 is 14%.

[27] In the Matter of Federal-State Joint Board on Universal Service Forward-Looking Mechanism for High Cost Support for Non-Rural LECs, CC Docket No. 96-45, CC Docket No. 97-160, Tenth Report and Order, FCC No. 99-304, November 2, 1999, ¶116.

[28] In the Matter of Federal-State Joint Board on Universal Service Forward-Looking Mechanism for High Cost Support for Non-Rural LECs, CC Docket No. 96-45, CC Docket No. 97-160, Tenth Report and Order, FCC No. 99-304, November 2, 1999. See, ¶ 113 and Appendix B, Table II.

and fiber cable input prices to better reflect the experience of rural LECS.

37. Cable input prices used in my study begin with the unadjusted copper and fiber optic cable input prices based on the RUS data, thus reflecting the input price characteristics of rural companies. However, input price changes have occurred since the RUS data was compiled. To account for price changes, two adjustments were made to bring copper and fiber cable input prices to 2003 levels.

38. The cable input prices used in the FCC SM reflect the price of fiber and copper cable inputs, and also include loadings for splicing and engineering. Thus, price changes from two separate sources should be considered when adjusting the cable input prices. The price changes for physical inputs – the copper and fiber optic cable which are used to construct loop plant – must be considered. The fiber and copper cable input prices were adjusted to account for inflation using price indices for fiber optic cable and for telephone wire available from the Bureau of Labor Statistics.[29]

39. The other source of input price inflation is the cost of constructing loop facilities, which will reflect labor and capital costs associated with building these facilities. Thus, the loadings for engineering and splicing contained in the FCC SM input price files were adjusted using the price index for communication structures available from the U.S.

[29] The fiber optic cable price index used is from BLS Series ID: PDU3357#E–Nonferrous Wiredrawing and Insulating–Fiber Optic Cable. The copper cable price index used is from BLS Series ID: PDU3357#2–Telephone and Telegraph Wire and Cable.

Department of Commerce's Bureau of Economic Analysis.[30]

40. I left the other input values used in the FCC SM runs, including capital costs, at their default levels. Use of the default weighted cost of capital, which is 11.25%, is highly conservative.[31]

Data Limitations

41. Each of the 128 operating companies in the Study Group is associated with a unique Study Area Code (SAC). In its current configuration, the FCC SM produces cost estimates based on SACs, and the FCC SM contains a default database of operating companies identified by their SAC. Within the Study Group, in most cases, SACs present in the FCC SM are associated with the same company which is operating today. In some instances, ownership changes have occurred so that a study area which had previously been doing business under one name began operating as another entity. For the vast majority of companies in the study group, identification of the SAC within the FCC SM presented no difficulty.

42. There were a few cases where I found data limitations. Where feasible, I made assumptions to allow the inclusion of representative data in the study. Below, I discuss the data limitations and how they were addressed in this study. While I have developed means for addressing the data limitations, it is likely that these limitations could be

[30] The Bureau of Economic Analysis' Table 5.4.4B "Price Indexes for Private Fixed Investment in Structures by Type–Communication" was utilized.

[31] An 8.8% cost of debt, 13.2% cost of equity, and 44.2% debt ratio are the components of the 11.25% cost of capital.

overcome with additional information from the appropriate carriers. There were three instances where I encountered data limitations:

- Century Telephone, Michigan. Century Telephone operates four (4) subsidiaries in Michigan. Information on the subsidiary Century Telephone of Upper Michigan (SAC 310689) is not contained in the FCC SM databases, nor in the Monitoring Report tables which track ownership changes. According to NECA, Century Telephone of Upper Michigan had 12,795 lines in 2003. This missing data was addressed by substituting data available on average loop costs from five (5) TDS and Century subsidiaries operating in Wisconsin with similar line counts.[32] The average loop costs for these five companies was used in lieu of Century of Upper Michigan's costs in calculating the overall state-wide average costs for Century Telephone, Michigan.

- Century Telephone, Wisconsin. Century Telephone operates seventeen (17) subsidiaries in Wisconsin. Information on Century Telecom of Kendal Wisconsin (SAC 330924) contained in the FCC SM databases indicates a single exchange subsidiary with fewer than 1,000 access lines. According to NECA, Century of Kendal had 86,670 lines in 2003. Average costs from five (5) similarly-sized companies were used in lieu of Kendal's costs in calculating the overall state-

[32] The companies used are: CenturyTelephone–Monroe, CenturyTelephone–North WI, Rhinelander-Frontier WI, Mount Vernon Telephone Company WI, and Southeast Telephone of Wisconsin, (SACs: 330913, 330956, 330917, 3309523, 30940).

wide average cost for Century Telephone, Wisconsin.[33]

- Citizens Telephone of West Virginia. Citizens Telephone operates three (3) subsidiaries in West Virginia. Information on the Citizens subsidiary with SAC 204339 was not contained in the FCC SM databases. According to NECA, this company had 94,050 lines in 2003. Average costs from five (5) similarly-sized companies were used in lieu of the missing subsidiary in calculating overall state-wide average of Citizens West Virginia costs.[34]

A total of 193,515 lines have costs estimated by the methods described in the three bullet points above. The lines represent about 1.6% of the total number of lines in the study. Thus, the estimation techniques applied have an insignificant impact on the overall results.

43. I found it necessary to make one other approximation. Citizens Communications Illinois operates eight (8) subsidiaries in Illinois. Specific information on Citizens–Frontier Illinois (SAC 341183) was not available. This Citizens subsidiary was formed when Citizens purchased 110 exchanges from three (3) separate GTE Illinois study areas. As information on which specific exchanges were transferred was not available, I created a sample of 110 exchanges from the three GTE properties contributing exchanges to Citizens–Frontier Illinois to generate a line count comparable to the resulting

[33] Citizens Tennessee, Century Colorado, Valor New Mexico, Alltel Florida, and Horry Coop South Carolina.

[34] Citizens Tennessee, Century Colorado, Valor New Mexico, Alltel Florida, and Horry Coop South Carolina.

Citizen's–Frontier Illinois operations. I used the results from this sample, along with the results from the other seven Citizens Illinois subsidiaries, to generate the overall state-wide average for Citizens Illinois operations.

44. Before turning to a discussion of the FCC SM results for the Study Group, I will discuss my approach to benchmarking the cost results.

Selection of the Benchmark

45. As discussed, determining Universal Service funding requires that a cost standard be established, that a benchmark be identified to evaluate costs, and that funding formulae be applied.

46. As was discussed earlier, the FCC utilized forward-looking economic costs developed by the FCC SM as the cost standard. This cost standard was then integrated into a benchmarking process. The non-rural benchmark compares the statewide average cost per line with the level of costs two standard deviations above the non-rural national average cost per line. A funding formula is then applied, i.e., for states which exceeded the benchmark, support becomes available for 76% of costs, with high-cost wire centers targeted for the support delivered by the non-rural funding mechanism.

47. If I were to apply the non-rural benchmark and funding formula to the companies in the Study Group, as was done by the Rural Task Force for rural LECs in general, the result would be a dramatic reduction in funding levels for the companies in the Study Group. For 2004, states which exceed the non-rural benchmark included only Alabama, Kentucky, Maine, Mississippi, Montana, Nebraska, South Dakota, Vermont, West

Virginia, and Wyoming. Use of this cost standard and benchmark would eliminate funding potential for all but two (2) of the companies in the Study Group.[35]

48. While the Rural Task Force approach to benchmarking and funding formulae using the FCC SM cost standard created the false dilemma of forcing dramatic funding cuts based on the application of the non-rural benchmark and funding formulae, I have developed an approach which is better suited for the Study Group. The benchmark for high-cost loop support I developed is as follows:

- All of the companies in the Study Group are used to develop the benchmark.
- Loaded loop costs alone are utilized. The FCC SM adds overhead loadings in the calculation of loop costs, however, these costs reflect overheads associated with overall company operations. Rather than attempting to allocate overhead costs, the entire amount of overhead is left in the study, which is a conservative assumption. [36] The average loaded loop cost for the Study Group is $387.67.
- For the state-level operations of each company in the Study Group, the state-wide

[35] Inclusion of the rural companies in non-rural statewide average costs would likely have little impact on statewide average costs due to the relatively low line counts associated with rural carriers. Some of the companies in the Study Group in the 200,000 plus category would carry more weight in the non-rural statewide average, however, as is illustrated in the results discussed further below, these companies have costs more similar to the non-rurals, thus their impact in their respective states is also not likely to impact results.

[36] If all overhead loadings are excluded, the holding company's average cost per line decreases, but so does the Study Group average cost per line, thus, the impact of including overhead is modest. The impact on the overall Study Group of eliminating overhead is a decrease in funding of about $4.2 million.

weighted average loop cost is calculated using the results from the FCC SM, with the adjusted cable input prices and line counts discussed above.[37]

- The nationwide weighted average loop cost for all firms in the Study Group is calculated based on the results from the FCC SM, with the adjusted cable input prices and capital costs discussed above.[38]

- The statewide average cost developed per the method described in the third bullet point above is then compared to the nationwide average cost developed per the method described in the fourth bullet point, and the funding formulae discussed below are applied.

49. The averaging and benchmarking that I have developed and applied to the Study Group targets the state-level operations of individual companies, and uses the nationwide average of the Study Group rather than an overall nationwide average. This approach provides a benchmarking process which is well suited to the rural companies in the Study Group.

Funding Formulae

50. To determine the level of support implied by the application of my benchmarking approach, I evaluated the forward-looking cost estimates utilizing the same high-cost-

[37] For holding companies with multiple subsidiaries in a state, the loop costs are aggregated on a weighted average basis within the state. Wire-center-level loop costs and line counts within the state are used in the weighting process.

[38] For the nationwide average, the weighting is based on loop costs and line counts at the wire-center level.

loop funding formulae which are utilized under the embedded cost approach. Table 2, below, shows the funding formulae which were applied.

Table 2: High-Cost Loop Funding Formulae	
Combined State Study Areas with More Than 200,000 Loops	
Cost Range as % of Study Group Average	**Percentage of Costs Supported**
0% - 115%	0%
115% - 160%	10%
160% - 200%	30%
200% - 250%	60%
250% and above	75%
Combined State Study Areas with between 100,000 and 200,000 Loops	
Cost Range as % of Study Group Average	**Percentage of Costs Supported**
0% - 115%	0%
115% - 150%	65%
150% and above	75%

51. I applied the formulae shown in Table 2 using the same approach used for current rural high-cost loop support. For example, the Study Group annual average cost per loop was calculated to be $387.67. Suppose that a company in the 200,000 and fewer category had forward-looking costs determined by the synthesis model of $678.42, i.e., 175% of the Study Group average. For the range of costs between 0% and 115% above the Study Group average, the company would receive $0 in funding per loop. For the percentage between 115% and 150%, the company would receive 65% of the difference, i.e., ($581.50 - $445.82)*.65 = $88.19 per loop. For the percentage above 150%, the company would receive 75% of the difference, i.e., ($678.42 - $581.50)*.75 = $72.69 per

loop. Thus, a company with forward-looking costs which were 175% of the Study Group average would receive total annual funding per loop of $160.88.

Combination of the Benchmark with the FCC SM Results

52. Table 3, below, (which also appears as Appendix 2 to NASUCA's Reply Comments) shows the results of the analysis and summarizes the impact of applying the FCC SM to rural companies in the Study Group. Column (1) identifies the holding company (if the entity is not part of a holding company, "NA" appears, followed by the operating unit name). Column (2) shows the state name. Column (3) shows the 2003 line count, reported by NECA.[39] Column (4) shows the annual loop cost for the holding company. Column (5) shows the Study Group average loop cost. Column (6) shows the relationship between the holding company direct cost and the Study Group average, stated as a ratio. Column (7) shows the annual per line support which results from applying the formula shown in Table 2 above, with Column (8) showing the projected high-cost loop support for the state-level holding Company. Column (9) shows the actual annual high-cost support for 2003. Column (10) shows the total annual change in funding. Column (11) shows the monthly impact per line of the total annual funding change. Column (12) shows the total first-year impact of the plan, which is derived by dividing the total reduction/increase projected by five (5). Finally, Column (13) shows the per-line per-month impact of the first-year change in funding. The results in Table 3

[39] The files utilized are available from the FCC's web site at: http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/Monitor/index.html

Line count information is contained in the file: "usf04r03.zip"

Table 3: FCC SM and Actual
High-Cost Loop Support Compared
for Study Group

State Holding Companies with More than 200,000 Lines

Holding Company (1)	State (2)	NECA Line Count 2003 (3)	Annual Cost (Loaded Loop) (4)	Study Group Average Annual Loaded Loop Cost (5)	Ratio (Holding Company /Study Group) (6)	Total Support Per Line (7)	Annual FCC SM Projected High Cost Loop Support (8)	Actual High Cost Loop Support 2003 (9)	**Total** Annual Change in Funding for High-Cost Loop (10)	Monthly Impact per Line Based on **Total** Change (11)	**Total First Year** Impact of 5-year Transition (12)	Per Line Monthly Impact: **First Year** of 5-year Transition (13)
Sprint	FL	2,063,198	$ 274.91	$ 387.67	70.91%	$ -	$0	$0	$0	$0.00	$0	$0.00
Sprint	NC	1,401,055	$ 380.24	$ 387.67	98.09%	$ -	$0	$0	$0	$0.00	$0	$0.00
Sprint	OH	588,163	$ 372.20	$ 387.67	96.01%	$ -	$0	$0	$0	$0.00	$0	$0.00
Alltel	GA	597,972	$ 429.82	$ 387.67	110.87%	$ -	$0	$26,703,420	-$26,703,420	-$3.72	-$5,340,684	-$0.74
Century	WI	464,965	$ 496.62	$ 387.67	128.10%	$ 5.08	$2,362,071	$12,979,587	-$10,617,516	-$1.90	-$2,123,503	-$0.38
Sprint	VA	398,761	$ 431.31	$ 387.67	111.26%	$ -	$0	$412,692	-$412,692	-$0.09	-$82,538	-$0.02
Sprint	TX	384,171	$ 384.63	$ 387.67	99.22%	$ -	$0	$20,716,080	-$20,716,080	-$4.49	-$4,143,216	-$0.90
Sprint	PA	384,743	$ 372.12	$ 387.67	95.99%	$ -	$0	$0	$0	$0.00	$0	$0.00
Valor	TX	340,350	$ 346.61	$ 387.67	89.41%	$ -	$0	$1,818,852	-$1,818,852	-$0.45	-$363,770	-$0.09
NA (Commonwealth)	PA	338,666	$ 360.42	$ 387.67	92.97%	$ -	$0	$0	$0	$0.00	$0	$0.00
Iowa Network Services	IA	275,150	$ 570.83	$ 387.67	147.25%	$ 12.50	$3,439,813	$0	$3,439,813	$1.04	$687,963	$0.21
Alltel	NE	266,097	$ 349.82	$ 387.67	90.24%	$ -	$0	$0	$0	$0.00	$0	$0.00
Sprint	IN	271,453	$ 386.97	$ 387.67	99.82%	$ -	$0	$0	$0	$0.00	$0	$0.00
Century	AR	264,837	$ 502.83	$ 387.67	129.71%	$ 5.70	$1,510,003	$23,296,821	-$21,786,818	-$6.86	-$4,357,364	-$1.37
Citizens	MN	263,851	$ 498.48	$ 387.67	128.58%	$ 5.27	$1,389,399	$3,250,488	-$1,861,089	-$0.59	-$372,218	-$0.12
Sprint	MO	239,627	$ 395.95	$ 387.67	102.14%	$ -	$0	$826,428	-$826,428	-$0.29	-$165,286	-$0.06
Sprint	TN	246,852	$ 323.95	$ 387.67	83.56%	$ -	$0	$0	$0	$0.00	$0	$0.00
Alltel	PA	234,649	$ 412.77	$ 387.67	106.47%	$ -	$0	$0	$0	$0.00	$0	$0.00
Alltel	NC	232,584	$ 328.72	$ 387.67	84.79%	$ -	$0	$13,704	-$13,704	$0.00	-$2,741	$0.00
Sprint	NJ	221,709	$ 269.38	$ 387.67	69.49%	$ -	$0	$0	$0	$0.00	$0	$0.00
												% Reduction
Totals for 200,000+:		**9,478,853**					**$8,701,286**	**$90,018,072**				**-90.33%**

State Holding Companies with between 100,000 and 200,000

Holding Company (1)	State (2)	NECA LINE COUNT 2003 (3)	ANNUAL COST (Loaded Loop) (4)	Study Group Average Annual Loaded Loop Cost (5)	Ratio (Holding Company /Study Group) (6)	Total Support Per Line (7)	Annual FCC SM Projected High Cost Loop Support (8)	Actual High Cost Loop Support 2003 (9)	**Total** Change in Funding for High-Cost Loop (10)	**Total** Monthly Impact per Line (11)	**First Year** Impact of 5-year Transition (12)	Per Line Monthly Impact: **First Year** of 5-year Transition (13)
Century	WA	184,216	$ 487.90	$ 387.67	125.85%	$ 27.35	$5,038,779	$16,239,375	-$11,200,596	-$5.07	-$2,240,119	-$1.01
Sprint	MN	168,457	$ 377.70	$ 387.67	97.43%	$ -	$0	$0	$0	$0.00	$0	$0.00
Consolidated Communications, Inc.	TX	164,632	$ 324.72	$ 387.67	83.76%	$ -	$0	$3,894,336	-$3,894,336	-$1.97	-$778,867	-$0.39
Citizens	AZ	165,471	$ 481.36	$ 387.67	124.17%	$ 23.10	$3,822,666	$15,298,860	-$11,476,194	-$5.78	-$2,295,239	-$1.16
Citizens	WV	157,084	$ 629.39	$ 387.67	162.35%	$ 124.11	$19,496,262	$20,609,736	-$1,113,474	-$0.59	-$222,695	-$0.12
TDS	WI	154,342	$ 432.43	$ 387.67	111.55%	$ -	$0	$3,620,628	-$3,620,628	-$1.95	-$724,126	-$0.39
D&E	PA	144,577	$ 285.60	$ 387.67	73.67%	$ -	$0	$0	$0	$0.00	$0	$0.00
Citizens	CA	154,548	$ 380.61	$ 387.67	98.18%	$ -	$0	$13,810,020	-$13,810,020	-$7.45	-$2,762,004	-$1.49
Sprint	KS	133,430	$ 636.51	$ 387.67	164.19%	$ 129.45	$17,272,524	$12,775,494	$4,497,030	$2.81	$899,406	$0.56
Verizon	ID	131,917	$ 439.55	$ 387.67	113.38%	$ -	$0	$4,675,032	-$4,675,032	-$2.95	-$935,006	-$0.59
Rock Hill	SC	144,539	$ 361.42	$ 387.67	93.23%	$ -	$0	$5,941,353	-$5,941,353	-$3.43	-$1,188,271	-$0.69
Citizens	IL	125,626	$ 551.49	$ 387.67	142.26%	$ 68.69	$8,629,238	$791,112	$7,838,126	$5.20	$1,567,625	$1.04
Valor	OK	114,764	$ 352.39	$ 387.67	90.90%	$ -	$0	$0	$0	$0.00	$0	$0.00
NA (Concord)	NC	116,761	$ 315.61	$ 387.67	81.41%	$ -	$0	$0	$0	$0.00	$0	$0.00
Alltel	TX	112,972	$ 335.72	$ 387.67	86.60%	$ -	$0	$1,380,384	-$1,380,384	-$1.02	-$276,077	-$0.20
Alltel	AR	107,965	$ 641.93	$ 387.67	165.59%	$ 133.52	$14,415,412	$7,507,812	$6,907,600	$5.33	$1,381,520	$1.07
Century	MI	105,571	$ 545.42	$ 387.67	140.69%	$ 64.74	$6,835,028	$12,500,412	-$5,665,384	-$4.47	-$1,133,077	-$0.89
TDS	TN	103,426	$ 404.29	$ 387.67	104.29%	$ -	$0	$2,379,660	-$2,379,660	-$1.92	-$475,932	-$0.38
Century	LA	102,283	$ 646.54	$ 387.67	166.78%	$ 136.98	$14,010,263	$33,219,159	-$19,208,896	-$15.65	-$3,841,779	-$3.13
												% Reduction
Totals for 100,000-200,000:		**2,592,581**					**$89,520,172**	**$154,643,373**				**-42.11%**
Total for Study Group:		**12,071,434**					**$98,221,457**	**$244,661,445**				**-59.85%**

indicate that for the 200,000-and-above category, over the 5-year phase-in, high-cost loop support would fall by about 90% — from about $90 million to about $8.7 million per year. For the companies between 100,000 and 200,000 lines, overall support falls by a more modest 42.1%, with funding levels dropping during the 5-year phase-in from about $154.6 million to $89.5 million. Overall funding for the Study Group drops by 59% during the 5-year phase-in, from $244.6 million to about $98.2 million. Table 4 (below) summarizes the results by holding company, rather than the state-level results reported in Table 3. Column (1) in Table 4 identifies the holding company or non-affiliated operating company. Column (2) shows the total line count for each company. Column (3) shows, for each company, the total annual high-cost loop support projected by the FCC SM and benchmarking approach discussed above. Column (4) shows the total 2003 high-cost loop support received by each company. Column (5) shows the total annual change in funding resulting from the application of the forward-looking cost standard. Column (6) shows the total first-year impact of the five-year transition. Table 4 shows that only Iowa Network Services will face funding increases over the five-year transition period.

Conclusion

53. My approach to calculating high-cost loop support for the Study Group, with its basis on forward-looking economic costs, and benchmark and funding formulae tailored for the rural companies in the Study Group, provides an approach superior to the current use of embedded costs. My approach is consistent with principles of incentive regulation, and the impact of emerging competition. It provides a reasonable means by which predictable levels of high-cost loop support can be provided to firms in the study group.

Table 4: FCC SM and Actual
High-Cost Loop Support Compared
Holding Company Summary

Holding Company (1)	NECA Line Count 2003 (2)	Annual FCC SM Projected High Cost Loop Support (3)	Actual High Cost Loop Support 2003 (4)	**Total** Annual Change in Funding for High-Cost Loop (5)	**First Year** Impact of 5-year Transition (6)
ALLTEL Total	1,552,239	$14,415,412	$35,605,320	-$21,189,908	-$4,237,982
Century Total	1,121,872	$29,756,143	$98,235,354	-$68,479,211	-$13,695,842
Citizens Total	866,580	$33,337,566	$53,760,216	-$20,422,650	-$4,084,530
Consolidated Communications, Inc. TX	164,632	$0	$3,894,336	-$3,894,336	-$778,867
D&E PA	144,577	$0	$0	$0	$0
Iowa Network Services IA	275,150	$3,439,813	$0	$3,439,813	$687,963
NA (Commonwealth) PA	338,666	$0	$0	$0	$0
NA (Concord) NC	116,761	$0	$0	$0	$0
Rock Hill SC	144,539	$0	$5,941,353	-$5,941,353	-$1,188,271
Sprint Total	6,501,619	$17,272,524	$34,730,694	-$17,458,170	-$3,491,634
TDS Total	257,768	$0	$6,000,288	-$6,000,288	-$1,200,058
Valor Total	455,114	$0	$1,818,852	-$1,818,852	-$363,770
Verizon ID	131,917	$0	$4,675,032	-$4,675,032	-$935,006
Totals:	**12,071,434**	**$98,221,457**	**$244,661,445**	**-$146,439,988**	**-$29,287,998**

STATE OF MASSACHUSETTS

COUNTY OF BARNSTABLE

The undersigned, being of lawful age and duly sworn on oath, hereby certifies, deposes and stated the following:

I have caused to be prepared the attached written affidavit in support of NASUCA in the above referenced docket. This affidavit is true and correct to the best of my knowledge, information, and belief.

Further Affiant sayeth not.

Trevor R. Roycroft, Ph.D., Affiant

Subscribed and sworn to before me this 14th day of December 2004.

Suzanne E. Chad

Commonwealth of Massachusetts - Date 12/14/04
Then personally appeared before me the above named
Trevor R. Roycroft PhD
and acknowledged the foregoing instrument to be
his/her free act and deed before me.
Suzanne E. Chad, Notary Public
My Commission Expires May 14, 2010

SUZANNE E. CHAD
NOTARY PUBLIC